

REMARKS

Claims 1, 2 and 4-9 are pending in the above-identified application. Claims 1 and 4 are amended and claim 3 is canceled. It is respectfully submitted that this Amendment is fully responsive to the Office Action dated March 9, 2005.

Claims 1-3 were rejected under 35 U.S.C. 102(e) as being anticipated by Berg (U.S. Pat. No. 6,118,553). Applicants have amended claim 1. Accordingly, withdrawal of the rejection is respectfully submitted.

Claim 1 of the above-identified application sets forth an image scanner comprising an elongate body a substrate, a line sensor, a roller shaft, at least one roller, a rotary encoder, and a drive transmission. The elongate body has an image reading surface for facing an original document. The substrate is provided in the body in parallel to the image reading surface. The line sensor extends in the body longitudinally thereof and is mounted on the substrate in facing relationship to the image reading surface for reading the document as the body moves along the document. The roller shaft is rotatably supported in the body to extend longitudinally of the body. The roller is supported on the roller shaft for rotating therewith while rolling on the document. The rotary encoder detects the rotation of the roller for determining a scanning distance of the body, and includes a rotary disk supported on a disc shaft. The drive transmission connects the roller to the rotary encoder. The rotary disc is oriented parallel to the substrate and the image reading surface.

Also, as shown for example in Fig. 3, the substrate 12 is shown to be oriented in parallel to the downwardly directed image reading surface of the elongate body 2 (and to the original

document P as well) with the line sensor 26 mounted on the substrate in facing relationship to the image reading surface. For example, such orientation of the substrate 12 and the line sensor is most effective for reliably reading the image carried on the document P. Similarly, the rotary disk 30 of the rotary encoder is also shown to be mounted in parallel to the substrate 12 and the image reading surface. This arrangement of the rotary disk 30 enables space-saving mounting of the rotary disk 30 even if the diameter of the rotary disk 30 is increased as much as the width of the substrate 12 allows. Indeed, the size of the body or housing 2 is determined primarily by the size of the substrate 12, rather than by the diameter of the rotary disk 30, when the rotary disk 30 is parallel to the substrate.

On the other hand, *Berg* discloses an image scanner wherein the rotary disk 44 of a rotary encoder is mounted perpendicularly to the image reading surface (bottom surface) of the housing body 50 or the document 16. Further, a printed circuit board 86 for carrying an optical sensor 48 associated with the rotary disk 44 is also oriented perpendicularly to the image reading surface. Thus, these features of *Berg* are distinctly different than the claimed invention.

Claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over *Berg*. Claim 4 is amended. Claim 4 also depends from claim 1. Accordingly, in view of the amendment and remarks provided above, withdrawal of the rejection is respectfully submitted.

Claims 5-9 were also rejected under 35 U.S.C. 103(a) as being unpatentable over *Berg* and further in view of *Kokubo et al.* (U.S. Pat. No. 5,943,497). Claims 5-9 depend from independent claim 1 and in view of the remarks provided above, should likewise be allowable.

Also, the Examiner seems to have ignored the disclosure of *Berg* in combining the

teaching of *Kokubo et al.* For example, in *Berg*, it is essential to employ the combination of worms 30, 38 and worm gears 34, 40 for realizing a large reduction ratio of 48:1 for example (column 4, lines 10-25). The combination of these worms and worm gears is the claimed feature for the *Berg* invention. Therefore, contrary to the Examiner's holding in the Office Action, one skilled in the art would not be motivated to replace such a transmission structure with the belt-pulley transmission disclosed in *Kokubo et al.*

Further, contrary to the Examiner's holding in the Office Action, *Kokubo et al* fails to teach or suggest any intermediate pulley for bending the belt.

In view of the aforementioned amendments and accompanying remarks, Applicants submit that that the claims, as herein amended, are in condition for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to expedite the disposition of this case.


Application No. 09/939,736
Attorney Docket No. 011036

Amendment under 37 C.F.R. § 1.111
Response Filed: August 9, 2005

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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